Software Design

Context

- Object-oriented analysis and design
- UML
  - Unified Modeling Language, a general-purpose modeling language, provides a standard way to capture and communicate system design
  - “Modeling is the designing of software applications before coding”

    Source: https://www.uml.org/what-is-uml.htm
- UML Class diagram

Determine and document the requirements of the system

- Context
- Problem statement
- Stakeholder requirements
- Business and user requirements
- Functional and non-functional requirements

High-level analysis and design checklist

- Identify the classes
- Identify fields (attributes)
- Identify methods (operations)
- Identify and distinguish the relationships
- Consider hierarchies and opportunities for reuse
- What about data structure(s)?
  - Are data structures needed?
  - Which data structure(s) would be most appropriate?
  - Why?
  - What interfaces or other classes are needed to support the selected data structure(s)?
  - What about growth?
- What about input/processing/output?
- What about design patterns?